

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Joachim LOHR, et al. Art Unit 2112
Appln. No.: 10/583,090 Conf. No. 1252
Filed: June 15, 2006
For: HARQ PROTOCOL WITH SYNCHRONOUS RETRANSMISSIONS

SUPPLEMENTAL PETITION TO MAKE SPECIAL

Assistant Commissioner of Patents
Washington, DC 20231

Sir:

This Supplemental or Renewed Petition is submitted in view of the Decision on Petition of July 11, 2007. Also, references cited in the Information Disclosure Statement (IDS) filed April 4, 2007 are discussed and distinguished herein. This IDS was filed before the Decision on Petition issued but was not mentioned in the Decision. The references submitted in this IDS were cited in a Japanese office action dated January 4, 2007 (a copy and English translation thereof are of record) in a counterpart Japanese application.

The Decision on Petition states at page 2, lines 6-14, that the Petition "specifically and only references independent claim 28 (although there are three independent claims in the instant

application, i.e., claims 28, 41 and 51)." The Decision also states that the Petition filed July 26, 2006 lacked an adequate discussion directed to how the language of each of the independent claims is specifically distinguishable from and patentable over the art deemed most closely related to the subject matter encompassed by the claims.

This Supplemental Petition adds to the discussion in the Petition filed July 26, 2006, by pointing out more particularly how specific language of each of claims 28, 41 and 51 patentably distinguishes over the individual or combined teachings of the art of record, in accordance with the requirements of 37 CFR 1.111(b) and (c).

The undersigned notes that MPEP 708.02 (as it read on July 26, 2007, i.e., prior to the rule change effective August 25, 2007) expressly required a detailed discussion of the references, which discussion points out, with the particularity required by 37 CFR 1.111 (b) and (c), how the claimed subject matter is patentable over the references. 37 CFR 1.111 (b) and (c) require submission of arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references.

However, the Decision on Petition at page 2, lines 1-41, appears to attempt to add to these requirements by proposing that

37 CFR 1.111 (b) and (c) and MPEP 708.02 require the Petitioner to "compare/contrast the claimed invention ... with respect to the prior art in the identified references," to "point out (substantively detail) the prior art elements and associations germane to the claims," and to "fully flesh out the comparison between the referenced prior art and Applicant's claimed features." However, the undersigned notes that 37 CFR 1.111 (b) and (c) and MPEP 708.02 (as it existed prior to the rule changes effective August 25, 2006) contained no such language or requirements. The requirements described in the Decision on Petition are more in line with the requirements which went into effect with the rule change on August 25, 2006. Thus, inasmuch as the statements in the Decision on Petition impose additional burdens beyond those established by 37 CFR 1.111 (b) and (c) and MPEP 708.02 (as it existed prior to the rule changes effective August 25, 2006), the Applicants respectfully traverse.

It is noted that the prior art references of record are considered and believed to have no relevance to the present claimed invention beyond that already stated in the Petition filed July 26, 2006 and that stated below. Furthermore, with respect to pertinence of any of the references of record, alone or in combination with other art of record, to the present claimed invention, the Petition filed July 26, 2006 and this

Supplemental Petition do in fact, compare and contrast the referenced prior art and Applicant's claimed invention.

Regarding the requirement at page three, first paragraph, of the Decision, it is noted that, of the 15 references cited in the Petition filed July 26, 2006, the documents deemed "most closely related" are (1) US 2005/0226182, (2) WO 03/096617, (3) EP 1286491, (4) USPN 6,018,516, (5) USPN 6,977,888 and (6) USPN 7,054,633. It is noted that page 2, line 6 of the Decision refers to "seven" references, but it is believed that this is a typographical error and should refer to six references. These documents deemed "most closely related" are discussed in the Petition filed July 26, 2006, and are discussed again below.

In view of the citation and discussion of references in the JP office action of January 4, 2007, the following three documents are also deemed to be among those "most closely related" to the present claimed subject matter, and are discussed and distinguished in detail below: (1) 3GPP TR 25.896 v1.1.2, Technical Specification Group Radio Access Network, Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6), (2) JP '828 (corresponding to US '718 which was cited as an English counterpart in the IDS of April 4, 2007) and (3) JP '262 (corresponding to US '718 which was cited as an English counterpart in the IDS of April 4, 2007).

The other documents cited in the JP office action of January 4, 2007 are deemed to be not among the references most closely related to the subject matter of the instant independent claims, i.e., (4) JP '793 (corresponding to US '710 which was cited as an English counterpart in the IDS of April 4, 2007), (5) WO '844, (6) 3GPP TSG-RAN WG2 #39, R2-032452, "E-DCH L2/L3 issues, MAC multiplexing," (7) 3GPP TSG-RAN WG2#38, R2-32230 "Mac Considerations for E-DCH," (8) 3GPP TSG RAN WG1#31, Tdoc R1-03-0284 "Scheduled and Autonomous Mode Operation for the Enhanced Uplink,"), and (9) 3GPP TSG-RAN1#35, R1-031246, "Reference Node-B Schedule for EUL."

The Decision on Petition (see page 2, line 15 et seq.) states that the Petition is deficient because "the petition filed January 26 July 2006 (sic) repeats substantially the entirety of the independent claim language (claim 28) and identifies all limitations as those limitations that the reference(s) do not show or suggest...."

It is noted that only the patentably distinguishing language of claims 28, 41 and 51 is cited in the discussion below, wherein the cited distinguishing combinations of features are clearly not substantially the entirety of the independent claim language.

The following points reiterate and specify how the claimed subject matter is deemed to be patentable over the references and

point out the specific distinctions believed to render the claims patentable over the references deemed "most closely related" as required by 37 CFR 1.111 (b) and (c) and MPEP 708.02.

It is submitted that the references cited in the Petition filed July 26, 2006 and in the IDS filed April 4, 2007, and particularly those deemed "most closely related" herein, considered either alone or in combination, fail to disclose or suggest the subject matter of independent method claim 28 directed to using a HARQ retransmission protocol, wherein:

"in case the feedback message indicates that the data packet has not been decoded successfully, transmitting a retransmission data packet after a predetermined time span upon having received the feedback message and optionally other data within the same transmission time interval using a maximum transmission power allowed to be used by the mobile terminal, if a transmission power required for transmitting the retransmission data packet and the other data is larger than the maximum allowed transmission power, wherein the other data has a higher logical channel priority than the data of the retransmission data packet." (claim 28).

It is submitted that the references cited in the Petition filed July 26, 2006 and in the IDS filed April 4, 2007, and particularly those deemed "most closely related" herein, considered either alone or in combination, fail to disclose or suggest the subject matter of independent mobile station claim 41 directed to using a HARQ retransmission protocol, wherein:

"in case the feedback message indicates that the data packet has not been decoded successfully at the base station, the transmitter is operable to transmit a retransmission data packet after a predetermined time span upon having received the feedback message and optionally other data within the same transmission time interval using a maximum transmission power the mobile station is allowed to use, if a transmission power required for transmitting the retransmission data packet and the other data is larger than a maximum allowed transmission power, wherein the other data has a higher logical channel priority than the data of the retransmission data packet." (claim 41).

It is submitted that the references cited in the Petition filed July 26, 2006 and in the IDS filed April 4, 2007, and particularly those deemed "most closely related" herein, considered either alone or in combination, fail to disclose or suggest the subject matter of radio network controller claim 51 directed to transmitting a retransmission mode indicator to a mobile station, which indicates:

"whether to perform a hybrid automatic repeat request method according to claim 28 or whether to perform a hybrid automatic repeat request method different therefrom," wherein the hybrid automatic repeat request method according to claim 28 includes the feature that: "in case the feedback message indicates that the data packet has not been decoded successfully, transmitting a retransmission data packet after a predetermined time span upon having received the feedback message and optionally other data within the same transmission time interval using a maximum transmission power allowed to be used by the mobile terminal, if a transmission power required for transmitting the retransmission data packet and the other data is

larger than the maximum allowed transmission power, wherein the other data has a higher logical channel priority than the data of the retransmission data packet." (claim 51).

More particularly, it is submitted that the references fail to teach or suggest, alone or together, the following features of each of the independent claims 28, 41 and 51: (1) transmission of "a retransmission data packet after a predetermined time span upon having received the feedback message" and (2) transmitting, within the same TTI, the retransmission data and optionally other data which has a higher logical channel priority than the data of the retransmission data packet. It is noted that the references fail to teach or suggest the following further feature of claim 51 directed to (3) whether to perform a hybrid automatic repeat request method according to claim 28 or whether to perform a hybrid automatic repeat request method different therefrom.

With regard to the teachings of the references, US 2005/0226182 discloses a scheme using maximum transmission power of a downlink data channel and a necessary minimum increased power amount as a minimum increase amount of transmission power of the downlink data channel which is necessary for a terminal to receive user data with no error. WO 03/096617 discloses a technique in which retransmissions are assigned to a higher priority queue so that they supercede transmission of other data

blocks which originate from the same "original" transmission buffer. The scheduler services the higher priority queues first. EP 1286491 discloses a multichannel ARQ system in which ACK/NACK messages are transmitted from the receiver to the transmitter on the feedback channel in second predetermined time intervals. The system allows for an ACK/NAK signal to be transmitted at multiple time instances. USPN 6,018,516 discloses a data retransmission technique which permits a retransmission whenever an elapsed time exceeds a clamp time without receipt of an acknowledgment. USPN 6,977,888 discloses a technique of saving an erroneously received and negatively acknowledged data packet and then combining it in some way with a retransmission. USPN 7,054,633 discloses a technique in which transmission power values are separately applied to ACK and NACK. However, US 2005/0226182, WO 03/096617, EP 1286491, USPN 6,018,516, USPN 6,977,888 and USPN 7,054,633, and the other references of record, considered alone or together, fail to teach or suggest the above-noted specific subject matter of independent claims 28, 41 and 51, and particularly, the subject matter of (1) transmitting a retransmission data packet after a predetermined time span upon having received the feedback message and (2) transmitting, within the same TTI, the retransmission data and optionally other data which has a higher logical channel priority than the data of the retransmission data

packet, or the above-noted feature of claim 51 directed to (3) whether to perform a hybrid automatic repeat request method according to claim 28 or whether to perform a hybrid automatic repeat request method different therefrom.

As noted in the JP office action of January 4, 2007, 3GPP TR 25.896 v1.1.2, Technical Specification Group Radio Access Network, Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6) discloses a HARQ retransmission protocol in which a retransmission is performed a predetermined time period T_{UEP} after a NACK feedback signal (see section 8.2, paragraph 5). This document also makes a general reference to whether different priorities are allowed in the same TTI or not (see section 7.2.2, paragraph 2) and MAC layer multiplexing support (simultaneous) transmission of multiple MAC-d flows (possibly with different priorities) into a single transport channel (see section 8.1.1.1). It is submitted that this document does not discuss transmitting retransmission data and higher logical channel priority data in the same TTI. In this document, the period T_{UEP} means a minimum time period of processing which is needed by a UE from when (a) it receives a response (ACK or NACK) to a transmission of data packet (e.g. data packet for initial transmission) on a certain channel and (b) it transmits the next data packet on the same channel. Here, "the next data packet"

may or may not be a retransmission of the data packet even when it receives NACK as a response. The UE can autonomously select the retransmission timing; the retransmission can be performed in the period T_{UEP} after NACK reception, in the period $T_{UEP} + 3TTIs$ (assuming the number of channels is 3 as indicated in Fig. 8.2.1 of this cited document) after NACK reception, in the period $T_{UEP} + 6TTIs$ after NACK reception, or the like. As a result, the Node B can not recognize in advance when the retransmission arrives at the Node B out of those timings.

The JP office action of January 4, 2007 applies JP '828 and JP '262 in combination with 3GPP TR 25.896 v1.1.2, Technical Specification Group Radio Access Network, Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6). The office action cites paragraphs 4, 5, 10, 23, 33 and 34 of JP '828 (corresponding to US '718) and paragraphs 15-19 and the Abstract of JP '262 (corresponding to US '536) and states that these references teach a general technique of, when data of different priorities are transmitted in the same TTI and a higher transmission power is required than the maximum allowed transmission power, adjusting to the maximum allowed transmission power by performing power suppression in accordance with the priority of the data. The JP office action states that these references teach transmitting retransmission data and other data

in the maximum allowed transmission power. The Applicants note that these two documents disclose a technique for performing power suppression based on data priority, when a higher power is required than a maximum power available to the transmission side for transmitting data with different priorities within the same transmission time interval. These references do not teach transmitting retransmission data and higher logical channel priority data in the same TTI.

Accordingly, it is submitted that the above-discussed three references applied in the JP office action do not teach or suggest at least the subject matter of present claims 28, 41 and 51 directed to (1) transmitting "a retransmission data packet after a predetermined time span upon having received the feedback message" and (2) transmitting, within the same TTI, retransmission data and optionally other data which has a higher logical channel priority than the data of the retransmission data packet. Comparing to claimed feature (1), in the cited prior art, as noted above, the UE can autonomously select the retransmission timing; that is, the retransmission can be performed in the period T_{UEP} after NACK reception, in the period $T_{UEP} + 3TTIs$ (assuming the number of channels is 3 as indicated in Fig.8.2.1) after NACK reception, in the period $T_{UEP} + 6TTIs$ after NACK reception, or the like. As a result, the Node B can not

recognize in advance when the retransmission arrives at the Node B out of those timings. Hence, the art applied in the JP office action of January 4, 2007, does not teach or suggest (1) transmission of a retransmission data packet after a predetermined time span upon having received the feedback message as recited in each of the present independent claims. Furthermore, none of these references applied in the JP office action of January 4, 2007 teaches or suggests, and the Japanese office action does not propose that they teach or suggest, (2) transmitting, within a same TTI, retransmission data and optionally other data which has a higher logical channel priority than the data of the retransmission data packet as recited in each of the present independent claims, or the above-noted feature of claim 51 directed to (3) whether to perform a hybrid automatic repeat request method according to claim 28 or whether to perform a hybrid automatic repeat request method different therefrom.

With respect to the other six documents cited in the JP office action of January 4, 2007, the Applicants note the following. JP '793 discloses sending retransmission data at an earlier time point, and WO '844 discloses deferring the retransmission to a later transmission time interval. R2-032453 and R2-32230 relate to MAC-entity and MAC-e entity. R1-03-0284

discloses that different HARQ entities are present for a plurality of scheduling modes, and R1-031246 discloses transmitting an indicator to indicate whether to perform the hybrid automatic repeat request included in a message. However, these references do not disclose or suggest the above-noted features of the present independent claims.

Furthermore, it is submitted that none of the other art of record, and particularly those deemed "most closely related" herein, teaches or suggests the above-noted subject matter of the present independent claims.

Thus, it is submitted that the art of record, considered alone or together, lacks important features of the present claimed invention and thus cannot be considered as anticipating or rendering obvious such subject matter.

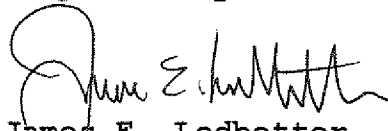
As noted above, it is hereby submitted that the prior art references of record are considered and believed to have no relevance to the present claimed invention beyond that already stated in the Petition filed July 26, 2006 and that stated herein. The Petition filed July 26, 2006 and this Supplemental Petition specify how the claimed subject matter is patentable over the references and point out the specific distinctions believed to render the claims patentable over the references

deemed "most closely related" as required by 37 CFR 1.111 (b) and (c) and MPEP 708.02.

Accordingly, in light of the foregoing discussion, the Applicants respectfully submit that the inventions of all the presently pending claims are not anticipated by the references of record and would not have been obvious over any combination thereof.

Grant of special status in accordance with this petition is respectfully requested.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

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JEL/att
ATTORNEY DOCKET NO. L7725.06112
STEVENS, DAVIS, MILLER & MOSHER, L.L.P.
1615 L STREET, NW, Suite 850
WASHINGTON, DC 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200